

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Application No.: 09/874,355
Attorney Docket No.: Q64810

REMARKS

Claims 1-46 are pending in the application. Claims 1-46 are rejected.

DOUBLE PATENTING:

Claims 1-46 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-17 of copending application No. 10/138,527 (hereinafter “‘527”).

Applicant believes that the present amendments to claims 1, 9, 18 and 32, along with the attached Declaration, will overcome the below noted rejections, resulting in the provisional double patenting rejection being the only remaining rejection. As noted in MPEP 804 I.B.:

If the “provisional” double patenting rejection in one application is the only rejection remaining in that application, the examiner should then withdraw that rejection and permit the application to issue as a patent, thereby converting the “provisional” double patenting rejection in the other application(s) into a double patenting rejection at the time the one application issues as a patent.

Applicant therefore respectfully submits that when the below-noted rejections are overcome, and if the ‘527 application has not issued as a patent, that the Examiner should remove the “provisional” status of the rejection and allow this application to issue. Applicant does acknowledge that if the ‘527 application issues as a patent prior to the removal of the other rejections, the double patenting rejection could remain.

AMENDMENT UNDER 37 C.F.R. § 1.111

U.S. Application No.: 09/874,355

Attorney Docket No.: Q64810

35 U.S.C. § 102:

Claims 1, 2, 9-11, 18, 19, 29, 32, 33, 44 and 45 are rejected under 35 U.S.C. § 102(e) as being anticipated by Wang et al. (U.S. Pub. No. US 2003/0191368 [hereinafter "Wang"]).

An exemplary aspect of the invention is directed to imaging a patient's tissue to determine if a disease is present. For example, as recited in claim 1, an operation is recited for assigning at least one of color data and brightness data to a computed-image based on a fluorescent-light image, so as to form a tissue-state image representing mainly the state of the tissue in the target area. Claim 1 also recites, assigning to the fluorescent-light image at least one of color data and brightness data, corresponding to the at least one of color data and brightness data assigned to said tissue-state image, so as to form a tissue-form image representing mainly the form of the tissue in the target area. Claim 1 also describes to combine the tissue-state image and the tissue-form image to form a composite image.

Wang discloses an image overlay for overlaying a fluorescent-light image on a white light image. Because the color of the overlay image is a mixed color of the fluorescent-light image and the white light image, the color of the overlap image does not accurately reflect a tissue state. Wang does not disclose obtaining a tissue state image and a tissue form image separately. Applicant therefore amends independent claim 1, 9, 18 and 32 to define that the tissue-state image and the tissue-formed image are obtained separately. The disclosure in Wang of overlaying a fluorescent-light image on a white light image, does not teach the claimed features regarding the separately obtained image of the tissue state and the tissue form.

AMENDMENT UNDER 37 C.F.R. § 1.111

U.S. Application No.: 09/874,355

Attorney Docket No.: Q64810

Moreover, in regard to claims 1, 2, 18, 19, 29 and 30, Applicant submits that Wang discloses a method for representing a tissue-state in color by using only a fluorescent light image and representing the range (tissue-form) of the tissue state by contour lines (paragraph [0075]). However, Wang fails to teach or suggest obtainment of a tissue-state image and a tissue form image.

Further, the white light image in Wang is not an image produced by controlling assignment of the color information and the information to the image so that the image represents the tissue-form. Therefore, if the invention of Wang were modified so that a synthesized image is produced by combining the white light image and the fluorescent light image, the color of the white light image and that of the fluorescent light image would be mixed, and it would be impossible to represent the tissue-state accurately. In other words, Wang fails to teach or suggest controlling assignment of the color information and the brightness information to each of the images. In an exemplary embodiment of the present invention, assignment of the color information and the brightness information to each of two images is controlled so that one image represents the tissue-state and the other image represents the tissue-form. This feature is recited in claim 1 as follows: "at least one of color data and brightness data corresponding to the at least one of color data and the brightness data assigned to said tissue-state image".

Further, Wang discloses detection of blue fluorescence, which represents the tissue-state, and red fluorescence, which represents the tissue-form (paragraph [0105]). However, such disclosure fails to teach or suggest a method for assigning the color information and the brightness information to the detected fluorescent light image. In other words, Wang does not

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Application No.: 09/874,355
Attorney Docket No.: Q64810

teach or suggest controlling assignment of the color information and the brightness information to each of the images so that one image represents the tissue-state and the other image represents the tissue form.

Further, regarding Claims 9 through 11, 32, 33, 44 and 45, Wang discloses obtainment of a reflected image at paragraphs [0128] and [0129]. However, Wang fails to teach or suggest controlling assignment of the color information and the brightness information to each of the fluorescent light operation image and the reflected image so that the fluorescent light operation image represents the tissue-state and the reflected image represents the tissue-form. Further, Wang fails to teach or suggest production of a synthesized image by combining the two images.

It is also respectfully noted that in item 5, on page 5 of the Office Action, the Examiner points to the description in paragraphs [0132] and [0133] of Wang. However, these paragraphs do not disclose any features that are relevant to the present invention.

Accordingly, Wang does not disclose each feature recited in claims 1, 9, 18 and 32 such that the rejection thereof under 35 U.S.C. § 102(e) should be withdrawn. The rejection of dependent claims 2, 10, 11, 19, 29, 33, 44 and 45 should also be withdrawn at least by virtue of these claims respectively depending upon independent claims 1, 9, 18 and 32.

Claims 1, 2, 7-11, 16-19, 27, 28, 31-33, 42, 43, 45 and 46 are rejected under 35 U.S.C. § 102(e) as being anticipated by Tsujita et al. (U.S. Pub. 2002/0138008).

The present application lists Sendai, Tomonari as the inventor. The Tsujita et al. reference lists Tsujita, Kazuhiro; Agano, Toshitaka; Hakamata, Kazuo; Hayashi, Katsumi; and Sendai, Tomonari.

AMENDMENT UNDER 37 C.F.R. § 1.111

U.S. Application No.: 09/874,355

Attorney Docket No.: Q64810

Applicant submits the attached Declaration under 37 C.F.R. § 1.132 to show that the presently named Applicant is the solo inventor of the present application. Although subject matter of independent claims 1, 9, 18 and 32 is described in Tsujita et al., that subject matter was not invented by Tsujita, Kazuhiro; Agano, Toshitaka; Hakamata, Kazuo; nor Hayashi, Katsumi, but was invented by the present Applicant - Sendai, Tomonari.

Therefore, Applicant invented the subject matter disclosed in Tsujita et al. that is relied on against claims 1, 9, 18 and 32 under 35 U.S.C. § 102(e), such that the rejection should be withdrawn. The rejection of dependent claims 2, 7, 8, 10, 11, 16, 17, 19, 27, 28, 31, 33, 42, 43, 45 and 46, should likewise be withdrawn at least due to these claims respectively depending from claims 1, 9, 18 and 32.

35 U.S.C. § 103:

Claims 3-6, 12-15, 20-23, 25, 26, 35-38, 40 and 41 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Wang or Tsujita in view of Kaneko (U.S. Pat. No. 6,422,994).

Kaneko is cited for allegedly disclosing to assign display gradation based on maximum value and frequency (histogram) of the brightness levels of the image signals to indicate a normal or non-normal tissue (see col. 17, lines 3-20 of Kaneko). Applicant submits that Kaneko fails to make up for the deficient teachings of Wang and Tsujita, such that the rejection of the dependent claims should be withdrawn at least by virtue of these claims respectively depending from independent claims 1, 9, 18 and 32. Further, as previously asserted, Applicant again emphasizes that in Kaneko, brightness information is used as information to represent a tissue

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Application No.: 09/874,355
Attorney Docket No.: Q64810

state. However, this reference does not teach or suggest the use of brightness information to represent a tissue form.

Accordingly, claims 3-6, 12-15, 20-23, 25, 26, 35-38, 40 and 41 are patentable over the applied references such that a rejection thereof under 35 U.S.C. § 103(a) should be withdrawn.

Claims 7, 16, 27 and 42 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Wang in view of Kaneko and further in view of Zeng et al. (U.S. Patent No. 5,647,368).

Claims 31 and 46 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Wang in view of Kaneko and further in view of Hayashi et al. (U.S. Patent No. 6,433,345).

Applicant submits that the additional application of Zeng et al. and Hayashi et al. fails to supplement and make obvious the deficient teachings of Wang, Kaneko and Imaizumi in regard to independent claims 1, 9, 18 and 32. Thus, claims 7, 16, 27, 31, 42 and 46 are submitted to be patentable over the applied references at least by virtue of their respective dependences on the independent

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

• AMENDMENT UNDER 37 C.F.R. § 1.111

U.S. Application No.: 09/874,355

Attorney Docket No.: Q64810

• The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

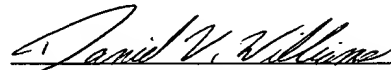
Respectfully submitted,

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE

23373

CUSTOMER NUMBER



Daniel V. Williams

Registration No. 45,221

Date: September 16, 2005